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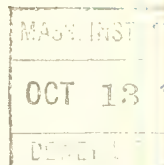
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THE POST-BELLUM RECOVERY OF THE SOUTH
AND THE COST OF THE CIVIL WAR*

Peter Temin

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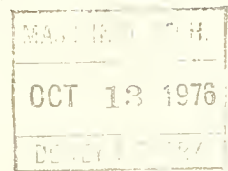


THE POST-BELLUM RECOVERY OF THE SOUTH
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In the course of the last year or so, three articles have appeared offering explanations for the failure of the South to regain its antebellum prosperity after the Civil War. In the first of these articles, Gavin Wright argued that the world demand for cotton grew markedly more slowly after the Civil War than before and that this change in the world economy was the cause of the postbellum relative southern poverty.¹ In a parallel but conflicting article, Roger Ransom and Richard Sutch argued that the low post-bellum income of the South was due to an inward shift in the supply of agricultural products caused by the withdrawal from the labor force of many freedwomen and the decline in hours worked of freedmen.² And Claudia Goldin and Frank Lewis, in an article calculating the cost of the Civil War to the North and the South, assumed that the deviation of the South from its antebellum growth trend was due to the effects of the war itself.³

As the literature now stands, therefore, there are three distinct and conflicting explanations for the decline in the relative income of the South after the Civil War. The purpose of this note is to reconcile these stories and to present a unified interpretation of the articles just mentioned. In brief, it emerges that both the demand effects noted by Wright and the supply effects described by Ransom and Sutch were important and that Goldin and Lewis, by failing to take account of these supply and demand effects, have overestimated the cost of the Civil War to the South by a factor of four.

The unified story will be constructed in two steps. First, the identification problem implicit in the conflict between Wright's emphasis on demand

and Ransom and Sutch's emphasis on supply will be resolved. In the course of doing this, a procedure will emerge for evaluating the supply and demand effects noted by the different authors in isolation from each other. Second, the results of the first step will be used to show the need for a recomputation of Goldin and Lewis' estimates of the cost of the Civil War to the South and to make the alternative calculation.

I

The message of Gavin Wright's article on the postbellum recovery of the American South is clear. In his words: "The main reason for the slow recovery of southern incomes after the Civil War was the drastic slowdown in the rate of growth of demand for cotton."⁴ Wright shows throughout his article his awareness that income is determined both by supply and demand influences, but he systematically discounts the influence of supply. He acknowledges early in the argument that the supply curve for cotton shifted inwards during and after the Civil War,⁵ but this point is not repeated in the course of the discussion. In the estimation of the demand curves, the supply of cotton is taken to be exogenously determined to avoid the identification problem implicit in simultaneous determination of supply and demand,⁶ and this econometric assumption appears to lead Wright into his neglect of the supply side. Because it was not important in the estimation of demand curves, his argument seems to imply, it was not important historically.

Wright's conclusion reinforces this presumption, although it fails to assess for the reader the importance of supply influences:

Recent research has placed great emphasis on the productive efficiency of the major institutions of southern agriculture and on the effects of emancipation on labor supply and productivity.

This paper does not assert that these considerations are unimportant, but it does raise the possibility that productive efficiency *per se* may be less important for the study of the southern income growth than the position of the South in the world economy.⁷

Roger Ransom and Richard Sutch, in a virtually contemporaneous article, concentrate on precisely those "effects of emancipation on labor supply and productivity" that Wright discounts. They assert that these effects were the primary causes of postbellum southern retardation. In their words: "The fact that per capita output still remained at 60% of its prewar level throughout most of the 1870's and barely exceeded three-quarters of that output by the end of the century is explained by emancipation."⁸

Ransom and Sutch summarily dismiss the effects of demand by noting that the post-war price of cotton was higher--both absolutely and relatively--than the pre-war price. They conclude that, "The failure of per capita output to recover to the prewar standard cannot be attributed to shifts in demand away from cotton."⁹ The two articles appear to be in sharp conflict.

Before resolving this apparent conflict, two possible points of confusion must be noted. The reader may have noted that Wright talks consistently of southern income in the passages quoted, while Ransom and Sutch talk equally consistently of per capita output. Are they in fact discussing the same thing? Surprisingly, the answer is not clear. Ransom and Sutch open their analysis with a discussion of Richard Easterlin's income data,¹⁰ but they switch rapidly to a discussion of agricultural output and never return to the income data. Wright, by contrast, does not relate his argument to any aggregate data at all. So it is possible to interpret these articles as dealing with separate questions: Ransom and Sutch deal only with the quantity of cotton grown, while Wright deals only with the price. This narrow

interpretation, however faithful to the words of these authors, surely does violence to their intentions. Both articles clearly are designed to offer explanations for the failure of southern income to regain its antebellum relationship to income in the rest of the country after the Civil War. And these explanations conflict sharply.

In addition, Ransom and Sutch talk of total agricultural output, while Wright talks only about cotton. The two studies consequently can be synthesized in either of two ways. Since the production of cotton fell by about the same amount as the production of other crops--whether 1866 or 1880 is compared with 1859--the discussion can be restricted to cotton.¹¹ In that case we are comparing different explanations for the decline in income generated by cotton cultivation. Alternatively, if we assume that the demand for other (non-cotton) agricultural goods was infinitely elastic, we can talk of total income. Since prices are fixed by demand under this assumption, the change in total income will be equal to the sum of changes coming from the cotton market and the change in the quantity of other agricultural products produced times their price. This assumption is faithful to the tradition of national-income accounting, where we do not take cognizance of price changes for internally traded goods in a calculation of real income.¹²

We return now to the problem of combining the two articles. We will discuss the cotton market first and then extend the analysis to include total agricultural income and then total income.

The conflict between the articles, interpreted subject to the caveats and assumptions of the last two paragraphs, can be assessed with the aid of Figure 1. Two sets of supply and demand curves

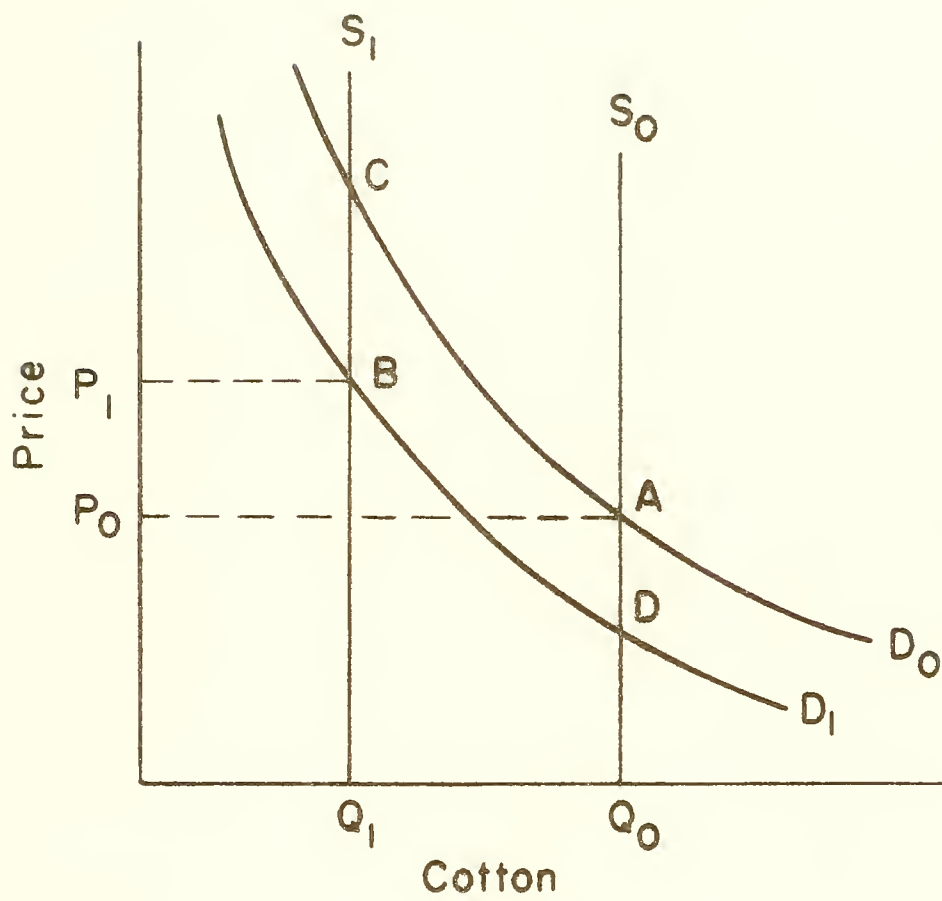


FIGURE 1

for American cotton are drawn in the graph, representing the antebellum and the postbellum relative positions of the curves. The trend in output has been removed from these curves, so that we may talk of static curves. D_0 , in other words, is both the actual demand curve in 1860 and the hypothetical curve showing what demand would have been in 1880 had the antebellum trend continued unabated. All shifts in the curves therefore must be interpreted as shifts relative to trend.¹³ The demand curves are given the shape estimated by Wright; the short-run supply curves are virtually price-inelastic as estimated by DeCanio and assumed by Wright.¹⁴

Ransom and Sutch's argument dismissing changes in the demand for cotton can be put in context by use of Figure 1. The postbellum price (P_1) exceeds the antebellum price (P_0) in this graph, even though both supply and demand have shifted inward. It is not possible to evaluate the relative importance of the respective shifts from an observation of the price alone.¹⁵

The graph also provides a way of evaluating the relative importance of Wright's and Ransom and Sutch's arguments as they pertain to cotton. The actual change was from point A to point B in Figure 1. Had the supply curve shifted while the demand curve stayed the same, the South would have moved to point C instead of B. And if the demand curve had shifted while the supply curve stayed immobile, the South would have found itself at point D. Would the change from A to C have been larger or smaller than the move from A to D?

We can answer this question by computing the increase in income attendant on a move from B to either C or D, and using the results of these calculations to answer the question posed. In order to evaluate the move from B to C, we need to know what would have changed if the postbellum supply of cotton had been faced with the

antebellum demand. Wright has calculated the change in price that would have resulted from such a situation under the assumption of a completely inelastic supply curve. For the decade 1875-1884, the price of cotton--and therefore the revenue derived from the export of cotton--would have been 80% higher than it was.¹⁶ Agricultural income represented 80% of the total income of the five main cotton states, and cotton accounted for about half of this share.¹⁷ This rise therefore would have increased their income by 32% or approximately one-third. And since the elasticity of the demand curve was approximately unity, any expansion of cotton output produced by the high price would not have increased Southern incomes any more than this amount. The rise in quantity would have been fully offset by the fall in price.

The effects of a move from B to D are a little more complex. Instead of moving along a perfectly inelastic supply curve, the South moves along an elastic demand curve in this hypothetical exercise. The rise in income depends on the elasticity of demand. According to Wright, the elasticity of demand for cotton rose from its antebellum level of approximately 1.0 to a postbellum level of 1.5.¹⁸ According to Ransom and Sutch, per capita agricultural output in the years around 1880 was only about two-thirds or three-quarters as large as it had been in 1860.¹⁹ If per capita output had not fallen, output therefore would have been between one-third and one-half larger.

We may take this range as representing the shift from Q_1 to Q_0 in Figure 1. With a demand elasticity of 1.5, a rise in output of this magnitude would mean a rise in income from growing cotton of between 15 and 25%. This in turn implies a rise in total income of between 5 and 10%. If the lower

price reduced output due to a positive long-run elasticity of supply, the move upward along the elastic demand curve would have reduced income. The estimated rise in income is therefore an upper bound.

The discussion up to this point has been restricted to cotton. The analysis for other agricultural income is completely different. Since demand is assumed to be infinitely elastic, only changes in the supply matter. As in the last paragraph, output would have increased by one-third to one-half in the absence of the supply shift noted by Ransom and Sutch. "Other" agricultural income accounted for approximately 40% of total income, so the rise in output would have meant an increase in income of 15 to 20 per cent. This is in addition to the rise in income stemming from the increase in the production of cotton, making the total increase in income from an alteration in supply between 20 and 30 percent. A change in the demand for cotton has no implications for other crops.

Having calculated the change in income attendant on moves from B to C and from B to D, we can now evaluate the change in income from movements from A to C and A to D. Although Figure 1 is confined to the cotton market, the discussion will now include income as a whole. The income of the five main cotton states fell from being almost exactly equal to the country mean in 1840 to 60% of the national average in 1880.²⁰ Had the South moved from A to C instead of from A to B, southern income in 1880 would have been one-third again as large as it actually was. Instead of being .6 of the national average, southern income would have been about three-quarters of the national mean.²¹ Had the supply curve shifted while the demand curve remained in its prewar state, therefore, the decline in relative income would have been approximately one-fourth.

If the demand curve had shifted while supply stayed the same--if the southern economy had moved to D instead of B--income in the South would have been 20 to 30 per cent higher than it was. It would have been between .7 and .75 of the national average. The decline in income relative to the rest of the country would have been almost the same if the shift in demand noted by Wright had occurred in isolation or if the shift in supply noted by Ransom and Sutch had occurred in isolation. The stories deserve equal weight in an account of the decline in Southern relative income after the Civil War.²²

II

Claudia Goldin and Frank Lewis compute the "indirect costs" of the Civil War to the South by discounting the difference between the actual stream of consumption after 1860 and a hypothetical one back to 1861. The hypothetical stream is supposed to represent the path of consumption in the absence of war and it grows "at the average annual rate actually attained during the period 1839 to 1859."²³ In other words, Goldin and Lewis assumed that the deviation of postwar southern consumption from its prewar trend was entirely due to the effects of the Civil War.

This critical assumption is not defended by Goldin and Lewis. In fact, they admit that "the low southern income figures for the post-bellum period have been a perennial puzzle to economic historians."²⁴ Their measure includes the effects of emancipation, although they conclude that the shift in the supply curve noted by Ransom and Sutch, considered in isolation, does not qualitatively affect their results.²⁵ As we will see, this conclusion

is the result of overestimating the cost of the war.

Goldin and Lewis do not calculate the effect of the change in demand noted by Wright. Instead they state disarmingly: "If the demand for cotton rose at a slower rate after than before the war, some of our indirect measure would be capturing this change, which is probably not due to the war."²⁶ As Wright makes clear, the decline in the rate of growth of cotton demand owed little or nothing to the American Civil War.²⁷ In addition, as Ransom and Sutch make clear, the wartime devastation in the South had been repaired long before the end of the 1870's. If we distinguish the war itself from emancipation, there does not seem any reason to assert^{that} the level of southern income and consumption was depressed after 1879 because of the Civil War. Emancipation needs to be treated separately both for clarity and for symmetry with the North where structural changes in the economy due to the war are ignored.

Following Wright and Ransom and Sutch, and in contrast to Goldin and Lewis, let us therefore assume that the South would have been no better off in 1879 and later years without the war than with it. This is equivalent to saying that the income of the South in the 1880's and later years was determined by the world demand for cotton and by the effects of emancipation on the size of the labor force, but not by the aftermath of the war itself. The hypothetical South with which the actual South is to be compared then is identical with the actual South after 1879.

It is impossible to know what the year-to-year variations in southern income between 1860 and 1879 would have been in the absence of the Civil War. The simplest assumption is that income grew--or fell in the case of the South--at a uniform rate between those dates, as Goldin and Lewis assumed

for the North.²⁸ Making this assumption, a series for hypothetical consumption can be constructed.

The "indirect" cost of the Civil War to the South is defined as the discounted sum of the deviations between the hypothetical and actual path of consumption. Using the assumptions just noted, this cost is calculated in Table 1. It is just under \$250 per person (in 1860 prices). This is less than one-fourth as large as the cost calculated by Goldin and Lewis--1042. The cost of the Civil War to southerners then was only one-third larger than the cost to northerners, not over five times as great as Goldin and Lewis assert.²⁹

III

The economy of the American South was buffeted by at least three separate shocks in the last half of the nineteenth century: the rate of growth of the demand for cotton declined precipitously; many former slaves withdrew from the labor force or reduced the hours they were willing to work, and the Civil War left enormous destruction and dislocation in its wake. Each of these shocks has been treated separately in the literature. By implication, each one has had to bear the burden of Southern retardation alone. But none of them is strong enough to do so; an integrated story is needed to show the role of all these shocks in a single unified story.

This note provides such a story, in which the effects of each of these events may be seen. The decline in the rate of growth of the demand for cotton was an important shock to the Southern economy in the late nineteenth century. Emancipation was an equally large shock to measured output in the

TABLE 1

	Actual per capita consumption (1860 dollars)	Hypothetical per capita consumption	Difference	Discount factor	Discounted difference
1860	86.51	86.51	0		
61	75.54	85.00	9.46	1.00	9.46
62	65.96	83.53	17.57	1.06	16.58
63	57.60	82.07	24.47	1.12	21.85
64	50.30	80.64	30.34	1.19	25.50
65	43.92	79.24	35.32	1.26	28.03
66	45.02	77.86	32.84	1.34	24.51
67	46.14	76.51	30.37	1.42	21.39
68	47.30	75.18	27.88	1.50	18.59
69	48.47	73.87	25.40	1.59	15.97
1870	49.15	72.58	23.43	1.69	13.86
71	49.84	71.32	21.48	1.79	12.00
72	50.53	70.08	19.55	1.90	10.29
73	51.24	68.86	17.62	2.01	8.77
74	51.95	67.66	15.71	2.13	7.38
75	53.83	66.48	12.65	2.26	5.60
76	55.77	65.33	9.56	2.40	3.98
77	57.78	64.19	6.41	2.54	2.52
78	59.87	63.07	3.20	2.69	1.19
79	62.03	62.03	0		
Column Sum					247.47

NOTES:

Column 1: Goldin and Lewis, Table 12. Entries between the years shown in their table have been interpolated using constant rates of growth (as they did in their calculations).

Column 2: Interpolation between the historical observations for 1860 and 1879 assuming a constant rate of growth (of -1.74% per year).

Column 3: Column 2 minus Column 1.

Column 4: $(1.06)^{t-1860}$ This is the same discount rate used by Goldin and Lewis.

Column 5: Column 3 divided by Column 4.

South. Next to these shocks, the Civil War itself recedes in importance. Although the war had a strong effect on the southern economy, it was temporary. A story of the Reconstruction period must dwell on all three shocks; stories of the post-1880 New South need concentrate only on the first two.

FOOTNOTES

1. G. Wright, "Cotton Competition and the Post-Bellum Recovery of the American South," Journal of Economic History, XXXIV (September 1974), 610-35.
2. R. Ransom and R. Sutch, "The Impact of the Civil War and of Emancipation on Southern Agriculture," Explorations in Economic History, 12 (1975), 1-28.
3. C. Goldin and F. Lewis, "The Economic Cost of the American Civil War: Estimates and Implications," Journal of Economic History, XXXV (June 1975), 299-326.
4. Wright, pp. 630-31.
5. Wright, p. 612.
6. This follows the lead of P. Temin, "The Causes of Cotton-Price Fluctuations in the 1830's," Review of Economics and Statistics, XLIX (November 1967), 463-70, and G. Wright, "An Econometric Study of Cotton Production and Trade, 1830-1860," Review of Economics and Statistics, LIII (1971), 111-20.
7. Wright, 1975, p. 635.
8. Ransom and Sutch, pp. 20-21.
9. Ransom and Sutch, p. 5.
10. R. Easterlin, "Interregional Differences in Per Capita Income, Population and Total Income, 1840-1950," in Trends in the American Economy in the Nineteenth Century, A Report of the National Bureau of Economic Research (Princeton, 1960), pp. 73-140.

11. Ransom and Sutch, p. 4n; Eugene M. Lerner, "Southern Output and Agricultural Income, 1860-1880," Agricultural History, 33 (July 1959), 122-23. For some areas and some time periods, the share of agricultural labor used in cotton cultivation rose after the war. Taking this into account complicates the division of the analysis between cotton and other income, but does not materially alter the results.
12. Treating a (hypothetical) rise in the export price of cotton as an increase in real income is not nearly so faithful. Southern real income, as the term is used here, includes the normal concept of income in 1860 prices plus any (hypothetical) net capital inflow in constant prices resulting from (hypothetical) changes in the terms of trade.
13. This simplification does some violence to Wright's argument which is cast in terms of rates of change, but the gain in clarity outweighs the distortion of the argument. The calculations are faithful to Wright's argument, not the graph.
14. S. DeCanio, "Cotton 'Overproduction' in Late Nineteenth-Century Southern Agriculture," Journal of Economic History, XXXIII (September 1973), 608-33.
15. To the extent that Ransom and Sutch talk only of agricultural output, Figure 1 shows that they are correct in attributing the fall from Q_0 to Q_1 entirely to the shift in the supply curve. But if this is the focus of their discussion, how are we to interpret their references to "the relative economic backwardness of the South" (p. 2) and "the aggregate economic performance of the post Civil War South"? (p. 21)
16. Wright, 1975, Table 7, Column 1, p. 631.

17. Easterlin, p. 100. The five states are those used by Ransom and Sutch: Alabama, Georgia, Louisiana, Mississippi, and South Carolina.
18. Wright, 1975, p. 630. Wright appears to think that this may be an overestimate. To the extent it is, income at D is overstated.
19. Ransom and Sutch, Figure 1, p. 4. The fall in cotton output was about the same as the fall in total output. Lerner, 1959.
20. Ransom and Sutch, p. 2n.
21. Income in the five states would have risen to be four-fifths of the previous national average. But the rise in the incomes of these states would raise the national average, so they would still be about one-quarter below the national mean.
22. It is not clear how to aggregate these two effects since the system is non-linear. Adding one-quarter to one-quarter gives a decline of one-half. Squaring three-quarters gives a decline of about 45 per cent. They are both slightly larger than the actual fall of 40 per cent.
23. Goldin and Lewis, p. 310.
24. Goldin and Lewis, p. 312.
25. Goldin and Lewis, pp. 313-15.
26. Goldin and Lewis, p. 315n.
27. Wright, 1975, pp. 632-33.
28. Goldin and Lewis made an allowance for the depression of the 1870's in their calculations for the North, attributing it to factors other than the aftermath of the war. A similar correction for the South reduces the cost of the war by less than three per cent.

29. Goldin and Lewis, pp. 313-14. Since their estimate of the costs of the war plus emancipation was so large, the cost of emancipation alone seemed relatively small. Their estimate of the per capita cost of emancipation (\$220) is almost equal to the per capita cost of the war as calculated here.

